

## SPECIFICATION SHEET



# MasterSeries® 856ST

## Double Check Detector Backflow Prevention Assemblies

Size: 2½" - 10"

The FEBCO MasterSeries 856ST Double Check Detector Assembly is specifically designed to protect against possible backpressure and back-siphonage conditions for non-health hazard (i.e., pollutant) application in accordance with Local Governing Water Utility Code. This Backflow Assembly is primarily used on potable drinking water systems and fire sprinkler systems, where Local Governing Code mandates protection from non-potable quality water being pumped or siphoned back into the potable water system.



**Model 856ST Double Check Detector Assembly**

### Features

#### Main Valve:

- Inline Serviceable Assembly
- No Special Tools Required for Servicing
- Captured Modular Spring Assembly
- Reversible & Replaceable Discs
- Field Replaceable Seats
- Ductile Iron Valve Body Design
- Stainless Steel Check Components
- Winterization feature with disc retainers and valve body drain ports
- Clapper Check Assembly
- Commonality between 1st & 2nd Check Components
- Captured O-ring Design

#### Auxiliary Bypass:

- Compact Bypass Design; Remains within Main Valve Assembly Profile
- Inline Serviceable ¾" Backflow Assembly
- No Special Tools Required for Servicing
- Field Replaceable Seats & Discs
- Detect Potential Underground Water Leaks
- Detect Unauthorized Water Usage

### Specifications

The FEBCO MasterSeries 856ST Double Check Detector Valve Assembly shall be installed on the potable water supply and at each point of cross-connection to protect against possible backpressure and backsiphonage conditions for non-health hazard (i.e., pollutant) applications. The assembly shall consist of a main line valve body composed of two (2) independently acting approved clapper style check modules with replaceable seats and disc rubbers. Servicing of both check modules does not require any special tools and are accessed through independent top entry covers. This assembly shall be fitted with approved UL/FM inlet/outlet resilient seated shutoff valves and contain four (4) properly located resilient seated test cocks as specified by AWWA Standard C510. The auxiliary bypass line contains a 5/8" x 3/4" (16 x 19mm) Water Meter that complies with ANSI/AWWA Standard C700 coupled with an approved double check assembly (DC) compliant to AWWA Standard C510. The bypass line is designed to detect leaks or unauthorized water usage of the water system while protecting against possible backpressure and backsiphonage conditions for non-health hazard (i.e., pollutant) application. Flow and pressure loss performance parameters shall meet the requirements of AWWA Standard C510.

### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Job Name \_\_\_\_\_  
 Job Location \_\_\_\_\_  
 Engineer \_\_\_\_\_  
 Approval \_\_\_\_\_

Contractor \_\_\_\_\_  
 Approval \_\_\_\_\_  
 Contractor's P.O. No. \_\_\_\_\_  
 Representative \_\_\_\_\_

FEBCO product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact FEBCO. FEBCO reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on FEBCO products previously or subsequently sold.

## Options - Suffix

OSY: UL/FM Approved OS&Y Gate Valves  
(ANSI/AWWA C515 Compliant)

CFM: Totalizing Cubic feet/min 5/8" x 3/4" Water Meter  
(ANSI/AWWA C700 Compliant)

GPM: Totalizing Gallons/min 5/8" x 3/4" Water Meter  
(ANSI/AWWA C700 Compliant)

LG: Less Shutoff valves; This is NOT an APPROVED ASSEMBLY

### Example Ordering Descriptions:

4" 856ST-OSY-GPM - Valve Assembly fitted with OS&Y Shutoff Valves & Gallon Feet per Minute Water Meter

4" 856ST-OSY-CFM - Valve Assembly fitted with OS&Y Shutoff Valves, Cubic feet per Minute Water Meter

## Assembly Flow Orientation:

- Horizontal & Vertical Up (2½" – 10") - Approved by FCCCHR-USC, ASSE, cULus, FM, IAPMO

## Materials

Below is a general material list of the Model 856ST. All assemblies' size 2½" through 10" is similar in materials and construction. Please contact your local FEBCO Representative if you require further information.

Main Valve Body: Ductile iron Grade 65-45-12

Coating: Fusion epoxy coated internal and external  
AWWA C550

Shutoff Valves: OS&Y resilient wedge gate valves AWWA C515 (UL/FM)

Check Seats: Stainless Steel

Disc Holder: Stainless Steel

Elastomer Disc: Silicone

Spring: Stainless Steel

Clamp: AWWA C606 (10" Only)

## Approvals

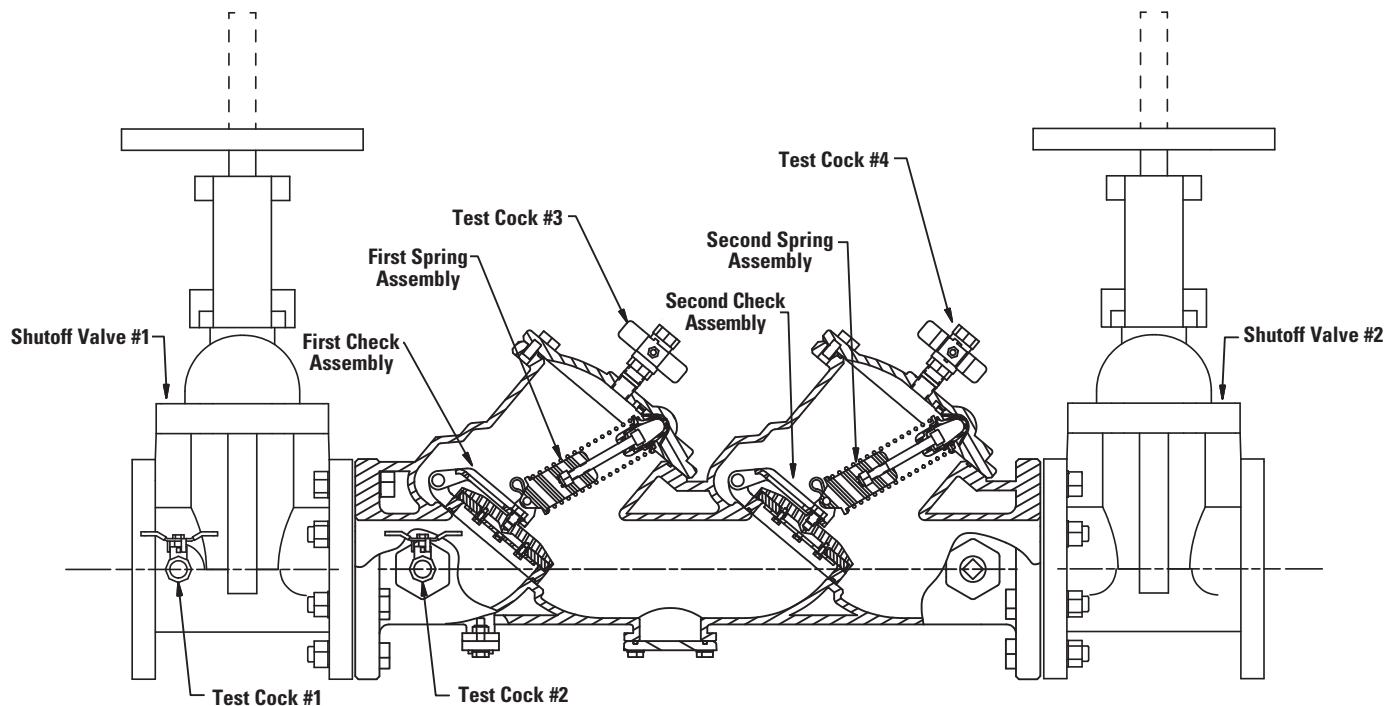
- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- ASSE 1048 Listed
- \*\*UL Classified (US & Canada)
- \*\*FM Approved
- IAPMO
- AWWA Standard C510 Compliant
- End Connections: Compliant to ASME B16.1 Class 125 & AWWA Class D Flange

\*\*Assembly configured with UL/FM Approved OS&Y RW Gate Valves. Less gate valve assemblies are not UL/FM approved configurations.



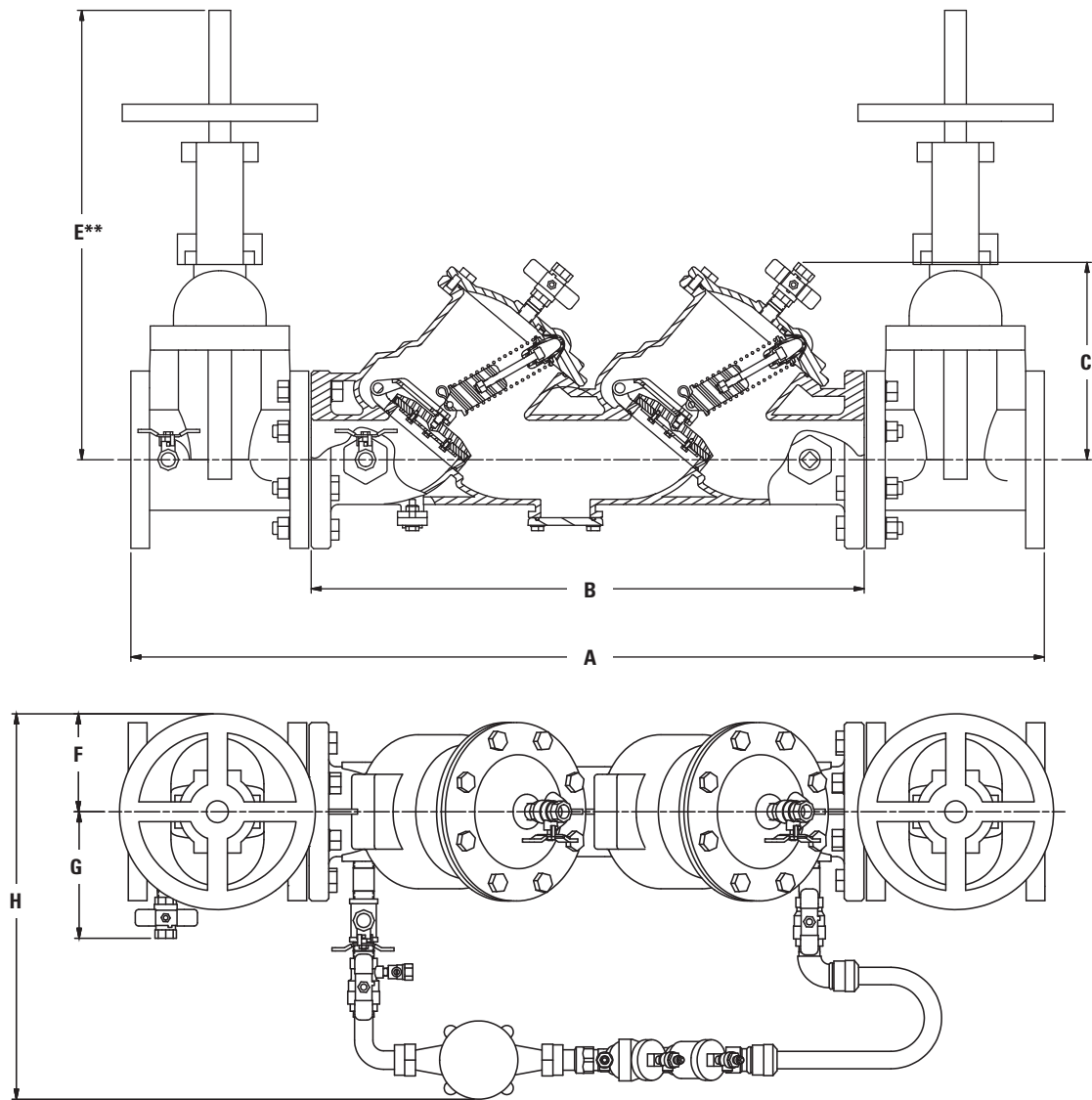
## Pressure - Temperature

|                              |                                       |
|------------------------------|---------------------------------------|
| Max. Working Pressure:       | 175 psi (12.1 bar)                    |
| Min. Working Pressure:       | 10 psi (0.7 bar)                      |
| Hydrostatic Test Pressure:   | 350 psi (24.1 bar)                    |
| Hydrostatic Safety Pressure: | 700 psi (48.3 bar)                    |
| Temperature Range:           | 33°F - 140°F (0.5°C- 60°C) Continuous |



# Dimensions & Weights

Below are the nominal dimensions and physical weights for the Model 856ST size 2½" through 10". Allowances must be made for normal manufacturing tolerances. Please visit our website to download a copy of this product's installation instructions, or contact your local FEBCO Representative for more information.



Model 856ST Assemblies

| SIZE       |            | DIMENSIONS |            |           |            |           |            |           |            |           |            |           |            | WEIGHT*** |             |            |
|------------|------------|------------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|-------------|------------|
|            | A          |            | B          |           | C          |           | E**        |           | F          |           | G          |           | H          |           | OSY         |            |
| <i>in.</i> | <i>in.</i> | <i>mm</i>  | <i>in.</i> | <i>mm</i> | <i>in.</i> | <i>mm</i> | <i>in.</i> | <i>mm</i> | <i>in.</i> | <i>mm</i> | <i>in.</i> | <i>mm</i> | <i>in.</i> | <i>mm</i> | <i>lbs.</i> | <i>kg.</i> |
| 2½         | 40¾        | 1035       | 25½        | 648       | 10         | 254       | 16⅝        | 416       | 4½         | 114       | 7⅞         | 181       | 13⅜        | 340       | 245         | 111        |
| 3          | 41⅞        | 1064       | 25⅝        | 651       | 10         | 254       | 22⅛        | 565       | 4½         | 114       | 7⅞         | 187       | 13⅜        | 340       | 271         | 123        |
| 4          | 46¼        | 1175       | 28         | 711       | 10⅞        | 257       | 23¼        | 591       | 5½         | 140       | 8⅞         | 206       | 14         | 356       | 338         | 153        |
| 6          | 56         | 1422       | 34¾        | 883       | 12¾        | 324       | 30⅞        | 765       | 6½         | 165       | 9⅞         | 251       | 15         | 381       | 515         | 234        |
| 8          | 65         | 1651       | 41¾        | 1061      | 15⅝        | 397       | 37¾        | 959       | 7          | 178       | 11⅞        | 283       | 15¾        | 400       | 826         | 375        |
| 10         | 72⅝        | 1845       | 46⅞        | 1178      | 15⅝        | 397       | 48         | 1219      | 9          | 229       | 12⅜        | 314       | 15¾        | 400       | 1234        | 560        |

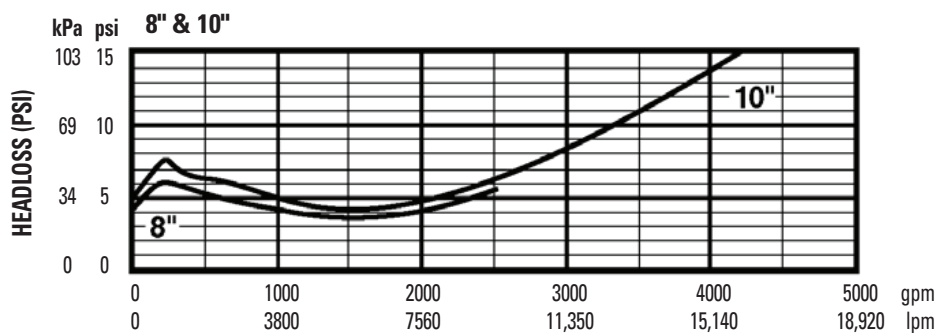
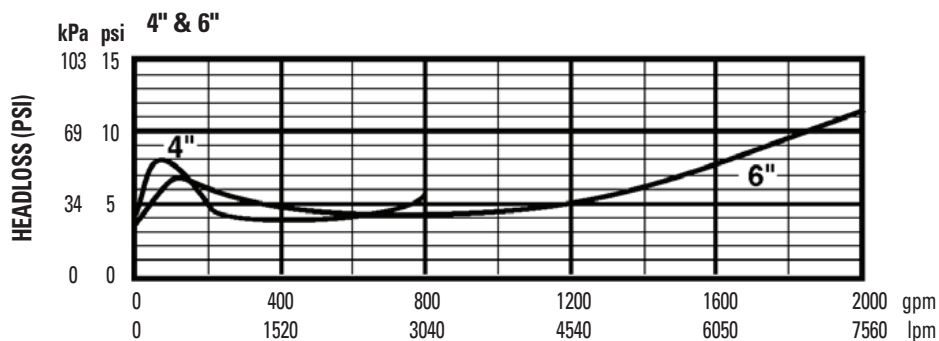
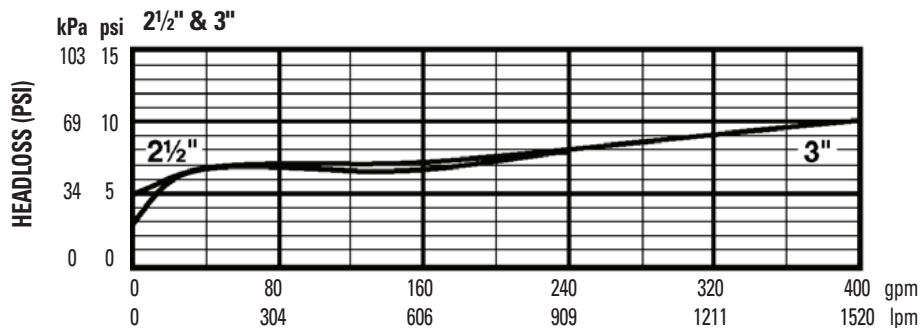
\*\* Indicates nominal dimensions with OSY Gate Valves (Full Open Position)

\*\*\* Indicates weight of complete Backflow Assemblies with specified Gate Valves

## Performance

Flow capacity chart identifies valve performance based upon rated water Velocity up to 20fps.

- Maximum service flow rate is determined by maximum rated Velocity of 7.5fps.
- AWWA Manual M-22 (Appendix C) recommends that the maximum water Velocity in the services be not more than 10fps.
- UL flow rate is determined by typically rated Velocity of 15 feet/sec.



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# **TK Engineering, LLC**

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April 22, 2014

KG Mechanical  
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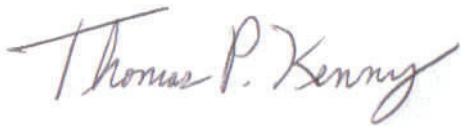
Re: Aqua New York, 370 Seamans Neck Rd., Seaford, NY 11783

To whom it may concern,

Per your request, I am confirming that the Master Series 856ST backflow preventer is acceptable for use in the sprinkler system designed and approved by the Nassau County Fire Marshal for the water treatment plant at the above referenced location.

If required by the fire marshal, we will update the drawings

Sincerely,

A handwritten signature in dark ink, reading "Thomas P. Kenny". The signature is written in a cursive style with a large, stylized 'T' and 'K'.

Thomas Kenny, P.E.